

THE IDENTITY OF *TACHYSPHEX ACUTUS* (HYMENOPTERA: SPHECIDAE), AN UNSOLVED MYSTERY¹

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ABSTRACT: A reevaluation of the identities of *Tachysphex acutus* and *T. similis* is given based upon the species' descriptions of Patton (1881), Fox (1894), Rohwer (1910), and Williams (1914) and examination of museum specimens. Although *T. similis* may be a synonym of *T. acutus*, the continued usage of the specific names, as presently known, is recommended.

The true identity of *Tachysphex acutus* (Patton) remains a mystery. Patton (1881) described "*Larra acuta*" from three specimens collected at Waterbury, Connecticut in August. He indicated that the species is related to *T. terminatus* (Smith), *T. tarsatus* (Say), and *T. montanus* (Cresson), which did nothing more than designate it as a species of *Tachysphex*. Patton's original description fits several dozen all-black Nearctic species in the genus and is totally undiagnostic at the species group level. In addition, his definition of the propodeal dorsum and side as being "uniformly and finely granulated" does not correspond with specimens of *T. acutus* as recognized today (Pulawski 1988). To complicate matters the type specimens of this species, which were placed in the Boston Museum of Natural History, were destroyed by fire around the turn of this century. Although Kohl (1885), Dalla Torre (1897), Ashmead (1899), H. Smith (1908), and J. Smith (1910) all mentioned *T. acutus* in their treatises on sphecoid wasps, none of these authors provided an adequate description of the species.

Fox (1894), in his treatment of the genus *Tachysphex*, first delineated diagnostic morphological characteristics for *T. acutus*. However, his description of the species fits better what is currently being called *T. similis* Rohwer than *T. acutus*, especially with regard to the least interocular distance (R. Bohart 1962), punctuation of the head and thorax, and width of submarginal cells. Furthermore, Fox (1894) listed *T. acutus* directly after *T. fusus* Fox, *T. terminatus*, and *T. apicalis* Fox, all members of the *terminatus* species group. *T. similis* also belongs to this group. Fox (1894) recorded Georgia and Florida as collection "localities" for *T. acutus* but Pulawski (1988), who examined 184 specimens of this species, found no Georgia locality and only a single, new northern Florida locality (Alachua County: Gainesville) for what is now being called *T. acutus*. The Georgia and Florida specimens listed in Fox's (1894) revision proved to be *T. similis*. The following questions arise: Did Fox examine Patton's type specimens prior to his revision of the genus? If not, did he presume that what

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is now being called *T. similis* was Patton's "*Larra acuta*"? A search for additional information is in order.

In 1910 Rohwer described *T. similis* and *T. similans* from eastern Texas specimens. The two species are clearly synonymous, with *T. similis* being the first name put in print (G. Bohart 1951). Rohwer (1910) provided no diagnostic characteristics which would assist in separating these species from others in the genus. Rohwer (1911) also described *T. bruesi* from Milwaukee County, Wisconsin, and this species has been synonymized with what is currently being called *T. acutus* (G. Bohart 1951). Rohwer was notorious for erecting species names *ad nauseam* and, in the process, creating innumerable synonyms. Therefore, one has to question whether *T. similis* is a good species or merely another of Rohwer's synonyms, in this case of *T. acutus*, especially in light of the above information and the fact that the type specimens of *T. acutus* were destroyed by fire before Rohwer described *T. similis*.

Compounding this ambiguity is the fact that Williams (1914), who re-described the species of *Tachysphex* occurring in Kansas, made no mention of *T. similis* in his redescrptions yet the species was already described (Rohwer 1910) and is abundant in the eastern half of the state (pers. obs.). His representation of *T. acutus* fits the current conception of this species, but some of the morphological characteristics he listed for *T. sepulcralis* Williams agree with those of *T. similis*. [*T. sepulcralis* was designated a synonym of *T. acutus* by Pulawski (1988)]. Williams (1914) recorded *T. sepulcralis* as being related to *T. apicalis* which, like *T. similis*, would place it in the *terminatus* group. He noted that specimens of *T. acutus* matched both Patton's (1881) and Fox's (1894) descriptions of this species, although he admitted he had not seen the type specimens. Williams (1914) remarked that there were at least two species of *Tachysphex* in the series labeled "*acuta*" in the Academy of Natural Sciences of Philadelphia collection! Although both Viereck (1916) and Mickel (1917) delineated *T. acutus* morphologically in their definitions of species of *Tachysphex*, neither worker mentioned *T. similis* or *T. sepulcralis*. Mickel (1917) leaned heavily on Williams' (1914) redescription of *T. acutus* in his own definition. Robertson (1928) recorded females of *T. acutus* taking nectar from nearly a dozen species of flowering plants but did not mention either *T. similis* or *T. sepulcralis*. Pulawski (1988) regarded these records as useless because of the doubtful determination of the wasp species. The omission of *T. similis* from all of these studies is noteworthy because it was described and was common in collections.

Further confusing were several series of specimens that I examined, some with associated handwritten notes, in trays labeled "*T. acutus*" in various museums. Ten specimens in the collection of the North Carolina Department of Agriculture determined originally as *T. acutus* and *T. maneei* Banks by N. Banks were examined by K.V. Krombein in 1950 and some of them proclaimed to be

T. similis (D.L. Wray, pers. comm.). A tray of 10 males and 10 females from Georgia in the Cornell University insect museum were identified as *T. acutus* by J.C. Bradley in 1923. These specimens were redetermined by me in 1963 as *T. similis* and, in 1980, reidentified as *T. similis* by W.J. Pulawski. However, there is a "legitimate" female of what is now being called *T. acutus* identified as such in the same collection (Southampton, Mass.; July 14, 1894; #429) with a very old determination label: "This spcm. ident. as *Tachysphex acutus* Patton ♀". A tray of "*T. acutus*" at the U.S. National Museum in 1963 contained specimens identified as both *T. sepulcralis* (= *T. acutus*) and *T. similis* (Det. K.V. Krombein), both species having been determined earlier as *T. acutus* by S.A. Rohwer. These determinations were made after Rohwer described *T. similis* in 1910! There is a note in the tray in Rohwer's handwriting (*teste* K.V. Krombein) that the Florida specimen (*T. similis*) agrees with J.C. Bradley's manuscript notes on *T. acutus* and that (Phil) Rau's specimens (*T. sepulcralis*) are an entirely different species. This note was made the year (1923) that Bradley determined *T. similis* specimens in the Cornell University collection as *T. acutus*. However, neither Bradley in 1963 nor I upon his death in 1975 could locate these notes at Cornell University. If Bradley indeed studied Patton's type specimens, then it would appear that *T. similis* must be a synonym of *T. acutus* and the name *T. bruesi* should be resurrected to accommodate the specimens now being called *T. acutus*. However, the correct interpretation will never be known because Patton's type specimens were destroyed a century ago and the hymenopterists involved in the name continuation or its discontinuity have passed away.

What steps then should be taken to correct this misconception, if one exists? I propose that everything remain *status quo*. R.M. Bohart, H.E. Evans, K.V. Krombein, A.S. Menke, W.J. Pulawski, and other prominent sphecidologists all recognize *T. similis* as presently defined. This species was re-described in detail by Pulawski (1988) and has a moderate amount of literature associated with its ecology and nesting behavior. *Tachysphex acutus*, as presently accepted, is, on the other hand, less well known, and has been the seat of much past taxonomic controversy. It, too, has a sizeable scattering of literature associated with its identification. Unfortunately, much of this literature probably pertains to what is now being called *T. similis*, but my paper serves to bring this misapplication of information to light. Pulawski (1988) redescrbed *T. acutus*, as currently known, and, in the process, designated a neotype specimen. Taking everything into consideration, present usage should prevail over chronology and S.A. Rohwer's probable error. I, therefore, recommend continued usage of the names *T. acutus* and *T. similis* as presently applied, with my paper providing an interpretation of any misconstruances that occurred in the early to mid-20th century.

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